ELECTRONIC MAIL [DISTRIBUTING] <u>DISTRIBUTION</u>

METHOD AND APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

5   **[0001]**   The present invention relates to <u>a</u> method and apparatus [which] <u>to</u> distribute electronic mail via a network.

2. Description of the Related Art

[0002]   [Wide spread of the] <u>The</u> Internet enables many users to make private and professional use of electronic mail in sending and receiving messages.

10   [The electronic] <u>Electronic</u> mail, or e-mail, is communicated between users via a mail server. For example, an e-mail destined to a "user A" sent from a terminal is transmitted to a [SMTP (]Simple Mail Transfer Protocol <u>(SMTP)</u> server which [handles SMTP] <u>contains the software/hardware which receives, stores, routes and sends the message</u>. The SMTP server judges whether to spool the e-mail

15   or transfer it to another SMTP server, based on [a] domain <u>information</u> included in the e-mail address of [the user A] <u>recipient</u>. This is determined at the moment when the e-mail is received. In a case where the e-mail is to be transferred to another SMTP server, the e-mail is then transferred instantaneously. Thus, [the] e-mail is <u>typically</u> sent to [a] <u>the</u> mail server

20   handling the e-mail of [the] user A in a very short period of time. <u>"Immediately" would be a term to use, except that there are times where the load on a system</u>

or a server is such that the transmission is held up without the desire of the sender.

[0003]   However, instead of [this timing at which the] cases where it is desirable that e-mail is sent to a recipient [in a short period of time]

5   "immediately", there [is a case] are cases where it is preferred, depending on [a] the content of the e-mail, that the e-mail be [reached to] received by the recipient [after a certain period of time passes. In that case] at a later time. In other words, a user [needs] desires to send [the] an e-mail exactly when the user wishes the recipient to read it.

10   <div align="center">SUMMARY OF THE INVENTION</div>

[0004]   The present invention has been made in view of the foregoing circumstance, and an object thereof is to provide an electronic mail transmitting technique with high usability and increased convenience.

[0005]   An electronic mail [distributing] distribution apparatus according to the

15   present invention [stores] temporarily stores [electronic] mail whose dispatch date and time are specified in advance, and is structured such that [the electronic mail with the] e-mail having a specified date and time is sent out [on] at the specified date/time. Thus, [the] electronic mail reaches [at] a recipient on [the specified] a desired date or date/time.

[0006]   In a preferred embodiment of the present invention, the [electronic mail distributing] e-mail distribution system comprises: a receiving unit which receives an [electronic mail] e-mail scheduled to be sent to a recipient at a specified date and time; a [mail storing] storage unit which stores the

5   [electronic] mail received [by the receiving unit]; a detection unit which detects [an electronic mail whose] the specified date and time [becomes the present date and time]; a retrieval unit which retrieves the [electronic] mail detected by the detection unit[,] from the [mail storing] storage unit; and a [transmitting] transmission unit which sends the [electronic mail] e-mail retrieved by the

10   retrieval unit.

[0007]   In another embodiment of the present invention, the electronic mail [distributing] distribution apparatus may [further comprise] include a confirmation unit which confirms that the specified transmission date and time [to be sent out] is set to [one] a time after the [present data] current date and

15   time[,]; and, which then stores the [electronic mail] e-mail in the [mail storing] storage unit.

[0008]   Moreover, the electronic mail [distributing] distribution apparatus may further comprise a generating unit which generates header information [of] for the electronic mail message as retrieved by the retrieval unit.

20   **[0009]**   [Moreover, any arbitrary combination of the above-mentioned structural components in the present invention is still effective as an

embodiment of the present invention when applied to among apparatus, method and system and so forth.]

[0010]   [Moreover, this] <u>This</u> summary of the invention does not necessarily describe all [necessarily] <u>necessary</u> features so that the invention may also be

5   [sub-combination] <u>sub-combinations</u> of these described features.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]   Fig. 1 is a block diagram showing [a structure of] an electronic mail distribution system [200] including an electronic mail [distributing] <u>distribution</u> apparatus [100] according to an embodiment of the present invention.

10   **[0012]**   Fig. 2 is a functional block diagram of the electronic mail [distributing] <u>distribution</u> apparatus [100].

[0013]   Fig. 3 is a [flowchart] <u>flow chart</u> showing [a] <u>the</u> process [covering up] <u>sequence</u> to [a stage] where the electronic mail is stored [in a mail database 106].

15   **[0014]**   Fig. 4 is a [flowchart] <u>flow chart</u> showing [a] <u>the</u> process [covering up to a stage] where the electronic mail stored in the mail database [106] is sent to a destination client [14] at [the designated] <u>a specified</u> date and time.

[0015]   Fig. 5 is an [exemplary electronic mail formation] example of a screen displayed [in] at a display unit of an originating client [12].

[0016]   Fig. 6 shows an [exemplary] example of the data structure of the mail database [106].

5   **[0017]**   Fig. 7 shows an [exemplary] example of electronic mail [containing designated] content with a specified delivery date and time.

[0018]   Fig. 8 shows an [exemplary electronic mail] example of an e-mail of the type shown in Fig. 7 when sent out.

<div align="center">DETAILED DESCRIPTION OF THE INVENTION</div>

10   **[0019]**   The invention will now be described based on the preferred embodiments, which do not intend to limit the scope of the present invention, but exemplify the invention. All of the features and the combinations thereof described in the embodiment are not necessarily essential to the invention.

[0020]   In [an electronic mail distributing apparatus according to an 15   embodiment of the present invention, an] a preferred embodiment of this invention, electronic mail or e-mail is first stored [in advance,] so that [the e-mail] it can be transmitted at a specified date and time in [place of a user] the future. Thereby, for example, the e-mail [distributing] distribution apparatus can [notify] publish the agenda of a conference [the day] days before [and] , or send

out an e-mail on the day of a person's birthday, [and] or notify a renewal due

date of a membership [card] before the expiration day [of the validity time], and

[so forth] of other related time-sensitive events.

[0021]   Fig. 1 is a block diagram showing [a] the structure of an electronic mail

5   (e-mail) distribution system 200 including an electronic mail [distributing]

distribution apparatus 100 according to an embodiment of the present invention.

The electronic mail [distributing] distribution apparatus 100 stores [an electronic

mail] e-mail messages sent from an originating [client] user 12 who is a sender

of the electronic mail, and sends it to a destination client 14 [on designated date

10   and time]. The [electronic mail distributing] e-mail distribution apparatus 100

and the originating [client] user 12 and the destination client 14 are connected

to one another via the Internet 10. In the existing prior art, such mail is

delivered immediately; any time delay being a result of system configuration,

excess traffic and other causes of system overload

15   **[0022]**   Fig. 2 is a functional block diagram of the [electronic mail distributing]

e-mail distribution apparatus 100. In terms of hardware components, the

[electronic mail distributing] e-mail distribution apparatus 100 is usually

comprised mainly of and realized by a CPU, a memory and an [electronic mail

distributing] e-mail distribution program of [an arbitrary] any of several types of

20   computer. It is to be understood by those skilled in the art that the [way]

hardware and software to realize such [the] a structure and [a mode of the]

system may vary greatly. It is to be noted that Fig. 2 does not show a

hardware-oriented structure but simply a function-oriented block diagram.

[0023]   A receiving unit 102 receives [the] e-mail having [the] a specified date

and time as sent from the originating [client] user 12. The designated date and

5   time may be attached to the e-mail or [may be] sent from the originating [client]

user 12 [separated] separate from the e-mail itself. A confirmation unit 104 first

confirms that the specified date and time is not before the [present] current date

and time. If the specified date and time is [set to one] before the present date

and time, the confirmation unit 104 notifies the originating [client] user 12 to the

10   effect that the specified date and time was wrongly set. Moreover, if the

specified date and time is set to [one] after the present date and time, the

confirmation unit 104 stores it in a mail database 106 in a manner such that the

e-mail [corresponds] is indexed to the specified date and time.

[0024]   A [date-time provision] clock unit 110 provides the present date and

15   time to [a] detection unit 108. Preferably, [the date-time provision] clock

unit 110 provides not only the standard times of a plurality of countries where

the [electronic mail distributing] e-mail distribution apparatus 100 are set up,

[but] and also the local times of those countries to the detection unit 108. [The

detection] Detection unit 108 compares the standard time or local time provided

20   by the [time-date provision] clock unit 110 with the designated date and time

[stored in] entered into the mail database 106[,] so as to identify and calculate a

correspondence between the designated date/time and the [electronic mail

received] e-mail message specifications. For example, in a case where an electronic mail is to be sent to a friend in the U.S. on his/her birthday, the date and time when the electronic mail is to be sent can be specified in compliance with the date and local time in the U.S. [The detection] Detection unit 108

5   instructs [a] retrieval unit 112 to retrieve the electronic mail whose specified date and time [becomes the present] corresponds with current date and time.

[0025]   [The retrieval] Retrieval unit 112 [supplies] sends the thus retrieved [electronic mail] e-mail to a generating unit 114. [The generating] Generation unit 114 generates a header portion [of] for the electronic mail. Thereby, a time

10   stamp is put on the electronic mail as if the electronic mail is sent from the originating [client] user 12 on the specified date and time. [A transmitting] Transmission unit 116 then sends out the [electronic mail] e-mail to the destination client 14.

[0026]   Fig. 3 is a [flowchart] flow chart showing [a] the steps process covering

15   up to [a stage] the point where the electronic mail is stored in a mail database 106. The receiving unit 102 receives an [electronic mail] e-mail sent from the originating [client] user 12 (S10). The confirmation unit 104 judges whether or not the specified date and time has already passed (S12). When the specified date and time [does not pass] has not passed the [present] current

20   date and time (YES in S12), the mail database 106 stores the [electronic mail] message in a manner such that the e-mail [corresponds] is indexed to the specified date and time. On the other hand, [when] if the specified date and

time has already passed the [present] current date and time [at the step S12] (NO in S12), the confirmation unit 104 notifies the originating [client] user 12 accordingly (S16), thus preventing any [incorrect specified date and time] message from being registered. The [electronic mail distributing] e-mail

5   distribution apparatus 100 repeats such processes of S10 through S16 every time [the] apparatus 100 receives an electronic mail, and stores it in the mail database 106 in sequence in a manner that information on a single electronic mail is counted as a record or item.

[0027]   Fig. 4 is a [flowchart] flow chart showing [a] the steps of the process

10   [covering up to a stage] where [the] electronic mail stored in the mail database 106 is sent to the destination client 14 at the designated date and time. [The detection] Detection unit 108 compares the designated date and time with [the present] current date and time provided by the [date-time provision] clock unit 110, and thereby judges [per record] whether or not the

15   [electronic mail] e-mail is eligible to be [eligibly] sent (S20). [The retrieval] Retrieval unit 112 retrieves from the mail database 106 the electronic mail whose designated date and time [become] corresponds to the [present] current date and time. [The generating] Generation unit 114 generates an electronic mail header. [The transmitting] Transmission unit 116 sends out the electronic

20   mail to the destination client 14 (S22) if the [present] current date and time [becomes] corresponds to the specified date and time (YES in S20). On the other hand, if the [present] current date and time does not yet [become] correspond to the specified date and time in the step S20 (NO in S20), [the]

detection unit 108 [judges] <u>checks</u> the next record stored in the mail

database 106 (S24). These processes are performed on each record in the

order starting from the first record through the last record stored in the mail

database 106. When the [judging] process is completed on the last record, the

5   [judging] process [resumes from] <u>recycles beginning at</u> the first record.

[0028]   In the above [judging] <u>evaluation</u> process, <u>the</u> time required for

judgment on the first through last records increases as the number of the

records increases. For example, in a case where the electronic mail is [judged]

<u>evaluated</u> to be sent only if in the detection unit 108 the [present] <u>current</u> date

10   and time coincides with the designated date and time [in the unit of a] <u>only for a</u>

<u>specific</u> second, there might be [electronic mail] <u>e-mail</u> unsent which should

have been sent. [Thus, the] <u>Here, however,</u> detection unit 108 preferably

[judges so that a] <u>evaluates that any</u> record whose specified date and time is

after the [present] <u>current</u> date and time is regarded as an [electronic mail]

15   <u>e-mail</u> to be sent out.

[0029]   Moreover, in order that [the electronic mail] <u>an e-mail</u> can reach a mail

server of the destination at <u>the</u> specified date and time, the detection unit 108

may [judge in a manner] <u>determine</u> that the due date and time to be sent

[arrives when it] <u>to the server</u> is slightly before the [exact] <u>actual</u> designated

20   date and time [instead] <u>of delivery</u>.

[0030]   Fig. 5 is an [exemplary electronic mail formation] example of an e-mail screen or form displayed [in] on a display unit of an originating [client] user 12. This [formation screen] form is displayed at an e-mail recipient end as a [WEB] Web page. [A transmission] Transmission date [inputting column] input field 28

5   is [a portion] the area in which the [specified] desired date and time are [inputted] input. Though the specified date only is [inputted] input as shown in Fig. 5, the time of day may be specified as well. A country selection [column] field 30 [specifies] calculates the standard time or local time for each country used in the detection unit 108. For example, if you wish to send out e-mail on

10   November 15, 2000 [of the] U.S. time, "2000/11/15" is inputted in the transmission date [inputting column] field 28, and [the] "U.S." is specified in the country selection [column] field 30. [A] SEND button 32 instructs the [electronic mail distributing] e-mail distribution apparatus 100 to dispatch the electronic mail containing the content [inputted] input in [these input columns] this form.

15   **[0031]**   When the user clicks on the SEND button 32, the originating [client] user 12 sends out the content [inputted] input in the input [columns] boxes to the [electronic mail distributing] e-mail distribution apparatus 100 via [HTTP (]Hyper Text Transfer Protocol (HTTP). The [electronic mail distributing] e-mail distribution apparatus 100 stores the received content in the mail database 106.

20   **[0032]**   Fig. 6 shows an [exemplary] example of the data structure of the mail database 106. [The mail] This database 106 includes a designated date-time column 40, a country column 42, a recipient column 44, a sender column 46

and a body column 48. The designated date-time column 40 holds the date and time of the e-mail to be sent. In an example shown in Fig. 6, the e-mail to "bbb@xyz.com" scheduled to be sent on November 15, 2000. [The mail] Mail database 106 may [stores] store a plurality of records [while] with single

5   information on [an] each e-mail [is] regarded as a record.

[0033]   The present invention has been described based on the embodiments which are only exemplary. It is understood by those skilled in the art that there [exist] exists other various modifications to each component and the combination of each processing described and that such modifications are

10   encompassed by the scope of the present invention. [Such the] Some such modifications include the following[.]:

Modifications

[0034]   In a case where the transmission date and time of the electronic mail is specified by the conventional electronic mail client software, the user may

15   implement a scheme in which the specified date and time are included in the body of the electronic mail. Fig. 7 shows an [exemplary] example of an electronic mail containing a designated date and time. The specified date and time are entered using a designated date-time tag 58. A portion enclosed by a tag <DATE> and a tag </DATE> indicates the specified date and time. The

20   receiving unit 102 reads the specified date and time based on the tag which indicates the specified date and time in the body of the electronic mail. When the receiving unit 102 reads out the specified date and time, the receiving

unit 102 supplies it to the confirmation unit 104. The confirmation unit 104

stores it in the mail database 106 in a manner such that the specified date and

time is associated with the electronic mail. In this mode, the date/time and the

electronic mail [may be] are stored as [the] an integrated unit of information,

5   [where] the date/time [is] associated with the electronic mail.

[0035]   When the electronic mail stored in the mail database 106 is sent out,

the generating unit 114 changes the time stamp of the electronic mail header

[while] and the specified date and time entered in the body is deleted. Fig. 8

shows an [exemplary] example of electronic mail shown in Fig. 7 [when] as sent

10   out. The time stamps 54 and 56 shown in Fig. 7 are changed to time stamps 50

and 52 bearing the date of November 15, 2000. Moreover, the specified date-

time tag is deleted. According to this scheme, the user can specify a date and

time of the electronic mail to be sent, by using the conventionally available

electronic mail client software.

15   [0036]   In the above embodiments, for each electronic mail to be sent, the

specified date and time is compared to the [present] current date and time.

However, [the electronic mails] a plurality of e-mail messages may be sorted out

in the order starting from one bearing the earliest date and time specified. In

that case, it suffices to check the time on a single electronic mail whose

20   specified date and time comes first.

[0037]   [According to the present embodiments, achieved is an electronic mail transmitting technique with high usability and increased convenience.]

[0038]   Although the present invention has been described by way of exemplary embodiments, it should be understood that many changes and substitutions may be made by those skilled in the art without departing from the spirit and [the] scope of the present invention which is defined by the appended claims.

WHAT IS CLAIMED IS:

1. An electronic mail distributing apparatus, comprising:

a receiving unit which receives an electronic mail scheduled to be sent

to a recipient at a specified date and time;

a mail storing unit which stores the electronic mail received by said

receiving unit;

a detection unit which detects an electronic mail whose specified date

and time becomes the present date and time;

a retrieval unit which retrieves the electronic mail detected by said

detection unit, from said mail storing unit; and

a transmitting unit which sends the electronic mail retrieved by said

retrieval unit.

2. An electronic mail distributing apparatus as recited in Claim 1, further

comprising a confirmation unit which confirms that the specified date and time

to be sent out is set to one after the present data and time, and which then

stores the electronic mail in said mail storing unit.

3. An electronic mail distributing apparatus as recited in Claim 1, further

comprising a generating unit which generates header information of the

electronic mail retrieved by said retrieval unit.

4. An electronic mail distributing apparatus as recited in Claim 2, wherein said detection unit detects an electronic mail whose specified date and time is set to one slightly before the exact specified date and time.

5. An electronic mail distributing apparatus as recited in Claim 1, wherein a data structure of said mail storing unit includes a specified date and time column, a destined country column, a recipient address column, a sender address column and a message body column.

6. An electronic mail distributing apparatus as recited in Claim 2, further comprising a receiving unit which receives the electronic mail and reads out the specified date and time and which supplies it to said confirmation unit, wherein the specified date and time are entered in a body of an electronic mail message using a tag indicative thereof and said receiving unit reads the specified date and time based on the tag, and wherein the tag is deleted when the electronic mail is sent to the recipient.

7. A method of distributing electronic mail, comprising:

receiving an electronic mail scheduled to be sent to a recipient at a specified date and time;

storing the electronic mail received;

detecting an electronic mail stored whose specified date and time becomes the present date and time;

retrieving the electronic mail as a result of said detecting, from the stored electronic mails; and

transmitting the electronic mail as a result of said retrieving.

8. A method of distributing electronic mail, comprising:

receiving an electronic mail sent from an originating client;

judging whether or not date and time specified by the originating client are effective, and notifying the originating client if the specified date and time has already passed the present date and time so as to prevent wrong registration of the electronic mail;

storing the electronic mail when the specified date and time indicates future date and time; and

sending the stored electronic mail on the specified date and time to a recipient.

9. An electronic mail distributing apparatus as recited in Claim 2, further comprising a generating unit which generates header information of the electronic mail retrieved by said retrieval unit.

10. An electronic mail distributing apparatus as recited in Claim 1, wherein the apparatus is implemented in a mail server.

11. An electronic mail distributing apparatus as recited in Claim 2, wherein the apparatus is implemented in a mail server.

12. An electronic mail distributing apparatus as recited in Claim 3, wherein the apparatus is implemented in a mail server.

ABSTRACT OF THE DISCLOSURE

An electronic mail [distributing apparatus] <u>distribution system</u> which

automatically sends out electronic mail which is scheduled to arrive at a

recipient at <u>a</u> specified future date and time. A receiving unit receives the

5   electronic mail which is scheduled to arrive at the recipient at <u>a</u> specified future

date and time. A mail database stores <u>the</u> information in a manner such that

the electronic mail is associated with the specified date and time. A detection

unit detects an electronic mail to be sent out, by comparing the specified date

and time with the [present] <u>current</u> date and time. A retrieval unit retrieves the

10   to-be-sent electronic mail detected in the detection unit, from the mail database.

A transmitting unit sends out the thus retrieved electronic mail to the recipient at

the date and time specified by the sender.